

CLAIMS

1. A spectroscopic device comprises:

a parallel interference spectrometer having chromatic dispersion characteristic; and

a dispersive device having chromatic dispersion characteristic smaller than that of a said parallel interference spectrometer,

wherein the parallel interference spectrometer and the dispersive device are arranged in the position of a predetermined distance separated and in such manner that direction of chromatic dispersion of the parallel interference spectrometer and direction of chromatic dispersion of the dispersive device may be different.

2. A spectroscopic device according to claim 1,

wherein said parallel interference spectrometer has focusing lens part and parallel interference plate, and said parallel interference plate has coated with a first reflecting film having boundary with light input plane on one surface of a transparent substrate, on the other surface of the transparent substrate, second reflecting film having reflection factor being smaller than that of said reflecting film is formed, and said dispersive device is arranged so as to diffract light passed through said second reflecting film.

3. A spectroscopic device according to claim 2, wherein

reflection factor of a light input plane of said parallel interference plate is under 10 %, reflection factor of said first reflecting film is no less than 90 % and, and reflection factor of said second reflecting film is no less than 80% .

4. A spectroscopic device according to claim 1, wherein said parallel interference spectrometer has a focusing lens part and a parallel interference plate, said parallel interference plate has, on one surface of transparent substrate, an input plane to which light from said focus lens part is inputted, and first reflecting film having a boundary with said input plane, on the other surface, second reflecting film having reflection factor being larger than that of a said reflecting film, said dispersive device is arranged so as to diffract light passed through said first reflecting film and so as to output diffracted light on side of said parallel interference plate.
5. A spectroscopic device according to claim 4, wherein reflection factor of light input plane of the said parallel interference plate is under 10 %, reflection factor of said first reflecting film is under 80 %, and reflection factor of said second reflecting film is under 90 %.
6. A spectroscopic device according to claim 4, wherein said dispersive device is formed by a reflection type diffraction grating, and formed in size being under 3×3 centimeters.
7. A spectroscopic device according to claim 1, wherein temperature expansion coefficient of said transparent substrate is in a range of $10^{-7}/^{\circ}\text{C}$.
8. A spectroscopic device according to claim 1, wherein said dispersive device is formed by at least one of a prism, a diffraction grating or a parallel interference plate.

9. An optical measurement device comprises:
a spectroscopic device according to claim 1; and
a light detection part detecting two dimensional distribution of light dispersed by said parallel interference spectrometer and dispersive device in said spectroscopic device.

10. An optical measurement device according to claim 9, wherein said light detection part comprises:

a photoelectric conversion part being any of a two dimensional arrayed type photo-detector, CCD, camera, or image intensifier; and

a signal processing part displaying information of two dimensional distributions of light obtained by the photoelectric conversion part as a two dimensional plane picture or converting and displaying the information as a relationship between wavelength and light intensity.

11. An optical measurement device comprises:

a spectroscopic device according to claim 4; and

a light detection part detecting a two dimensional distribution of a light dispersed by said parallel interference spectrometer and dispersive device between said dispersive device of said spectroscopic device and said parallel interference.

12. An optical measurement device according to claim 11: wherein the photoelectric conversion part forming said light detection part has a fixing part made from transparent material integrated in side of said first reflecting film of the transparent substrate and between said parallel interference plate and the dispersive

device.

13. An optical measurement device according to claim 10: which further comprises a means for detecting of a temperature or a distortion of the said transparent substrate, and said signal processing part has a means for proofreading the displayed information of the optical two dimensional distribution depending on the said information of the temperature or a distortion.

14. A spectroscopic device according to claim 1: wherein said transparent substrate and fixing part is made of a element having low loss for a light of region from near infrared to infrared; and ,
the light detection part is made of a element sensitive to a light of region from near infrared to infrared.